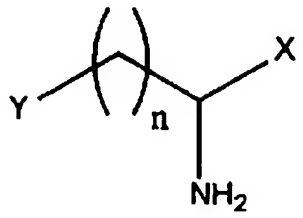
CLAIMS

What is claimed is:

1. A compound comprising:

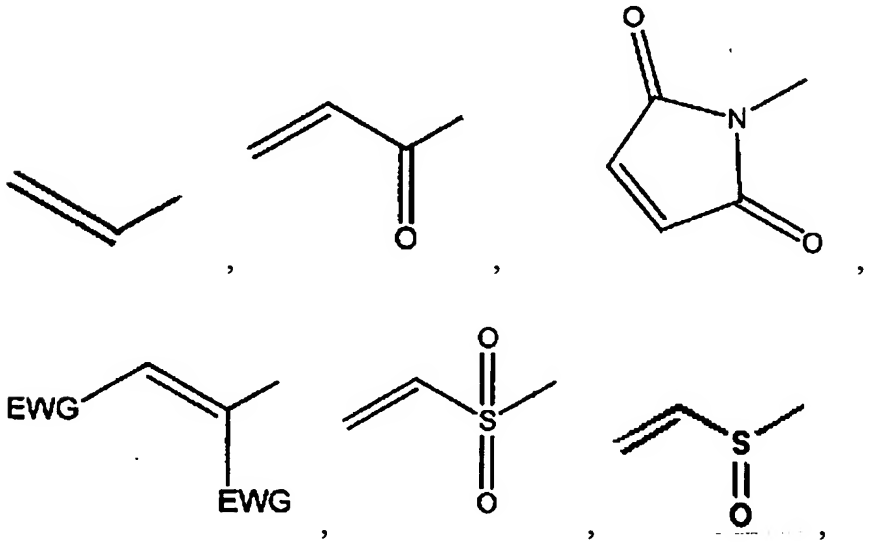


,

wherein:

X is selected from the group consisting of CH_2SH, CH_2OH, NHOH, PO_3H_2, pyrazoles, imidazoles, oxazoles, isoxazoles, thiazoles, isothiazoles, triazoles, oxadiazoles and thiadiazoles; and

Y is selected from the group consisting of: COCZ, C(EWG)Z, SOCZ, SO_2CZ,



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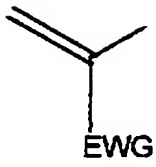
and 

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and pharmaceutically acceptable salts thereof, wherein:

EWG is an electron withdrawing group selected from the group consisting of CHO, COR, COOH, COOR, NO_2, CN, SOR, SO_2R, and SO_2OR;

Z is selected from the group consisting of chlorine, bromine, and iodine;

R is an alkyl or aryl group selected from the group consisting of methyl, ethyl, propyl, i-propyl, butyl, s-butyl, t-butyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl; and

n is an integer.

2. A compound as recited in claim 1, wherein n is selected from 4 and 5.

3. A pharmaceutical composition for treating microbial infections in a subject, comprising:

a therapeutically effective amount of an agent wherein the agent is selected from the compounds of claim 1, the agent being capable of altering an aspect of Type-I MetAP activity or structure in the subject so as to result in treatment of the bacterial infection; and

a pharmaceutically acceptable carrier.

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4. A pharmaceutical composition for treating bacterial infections in a subject, comprising:

a therapeutically effective amount of an agent wherein the agent is selected from the compounds of claim 1, the agent being capable of altering an aspect of Type-I MetAP activity or structure in the subject so as to result in treatment of the bacterial infection; and

a pharmaceutically acceptable carrier.

5. A compound as recited in claim 4, wherein the subject is a human.

6. A compound as recited in claim 4, wherein the agent does not completely inhibit the activity of Type-II MetAP in the subject but is bactericidal by inhibiting the activity of Type-I MetAP in the subject.

7. A method of providing a dosage of an antibacterial compound to a subject in need thereof, the method comprising administering to the subject an effective amount of a compound as recited in claim 1.

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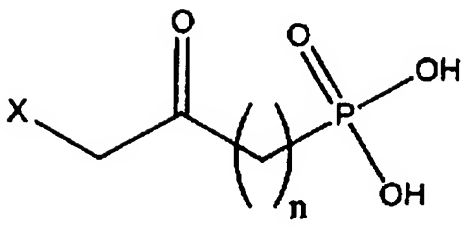
8. A compound comprising a formula selected from the group consisting of:



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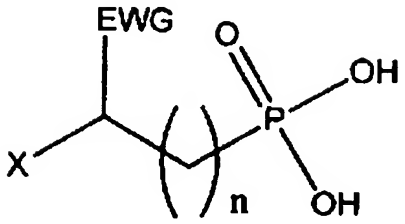

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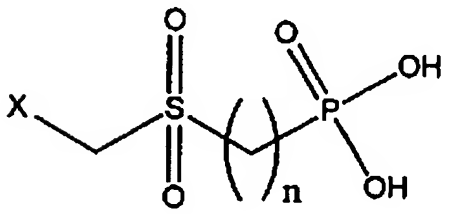

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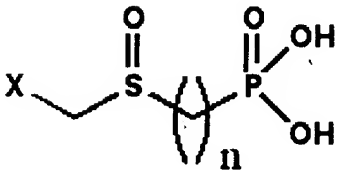

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and pharmaceutically acceptable salts thereof, wherein:

X is chlorine, bromine, or iodine;

EWG is an electron withdrawing group selected from the group consisting of CHO, COR, COOH, COOR, NO_2, CN, SOR, SO_2R, and SO_2OR;

R is an alkyl or aryl group selected from the group consisting of methyl, ethyl, propyl, i-propyl, butyl, s-butyl, t-butyl, phenyl, substituted phenyl, naphthyl, and substituted naphthyl; and

n is an integer.

9. A compound as recited in claim 8, wherein n is selected from 4 and 5.

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10. A pharmaceutical composition for treating bacterial infections in a subject, comprising:

a therapeutically effective amount of an agent wherein the agent is selected from the compounds of claim 8, the agent being capable of altering an aspect of Type-I MetAP activity or structure in the subject so as to result in treatment of the bacterial infection; and

a pharmaceutically acceptable carrier.

11. A compound as recited in claim 10, wherein the subject is a human.

12. A compound as recited in claim 10, wherein the agent does not completely inhibit the activity of Type-II MetAP in the subject but is bactericidal by inhibiting the activity of Type-I MetAP.

13. A method of providing a dosage of an antibacterial compound to a subject in need thereof, the method comprising administering to the subject an effective amount of a compound as recited in claim 8.

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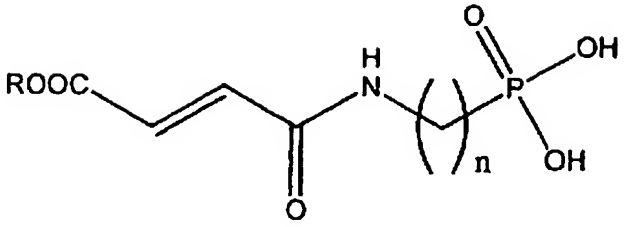
14. A compound comprising a formula selected from the group consisting of:



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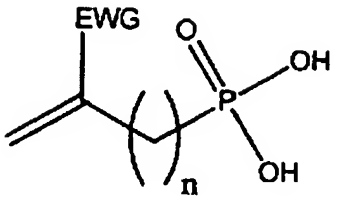

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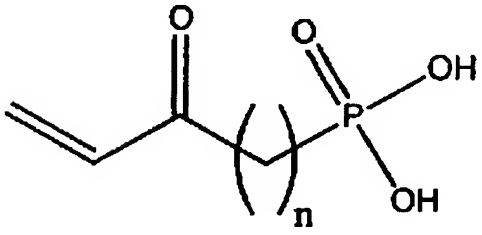

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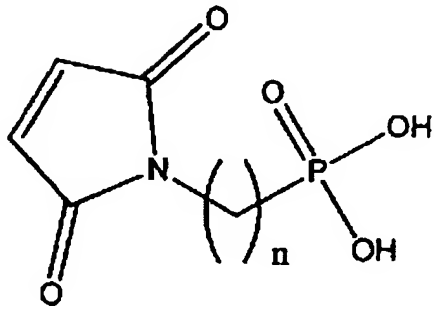

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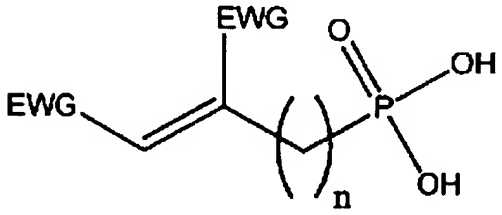

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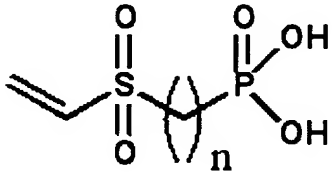

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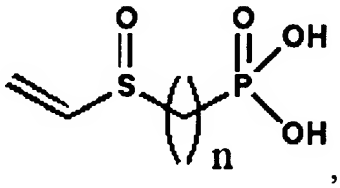

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and pharmaceutically acceptable salts thereof, wherein:

EWG is an electron withdrawing group selected from the group consisting of CHO, COR, COOH, COOR, NO_2, CN, SOR, SO_2R, and SO_2OR;

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R is an alkyl or aryl group selected from the group consisting of methyl, ethyl, propyl, i-propyl, butyl, s-butyl, t-butyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl; and

n is an integer.

15. A compound as recited in claim 14, wherein n is selected from 4 and 5.

16. A pharmaceutical composition for treating bacterial infections in a subject, comprising:

a therapeutically effective amount of an agent wherein the agent is selected from the compounds of claim 14, the agent being capable of altering an aspect of Type-I MetAP activity or structure in the subject so as to result in treatment of the bacterial infection; and

a pharmaceutically acceptable carrier.

17. A compound as recited in claim 16, wherein the subject is a human.

18. A compound as recited in claim 16, wherein the agent does not completely inhibit the activity of Type-II MetAP in the subject but is bactericidal by inhibiting the activity of Type-I MetAP.

19. A method of providing a dosage of an antibacterial compound to a subject in need thereof, the method comprising administering to the subject an effective amount of a compound as recited in claim 14.

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20. A method of providing an antibacterial dosage to a subject in need thereof which comprises:

administering to a subject an effective amount of a compound that is selectively configured to inhibit Type-I MetAP, the compound comprising the formula:

A-B-C

wherein:

A is a functional group selected to covalently bond with a recognition site on Type-I MetAP;

C is an electrophilic functional group selected to inhibit a catalytic site on Type-I MetAP; and

B is a series of groups selected to separate A and C such that each of A and C effectively bind to the respective recognition and active sites on Type-I MetAP;

and pharmaceutically acceptable salts thereof.

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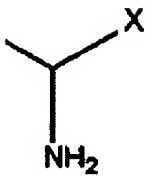
21. A method as recited in claim 20, wherein A comprises



wherein X is selected from the group consisting of CH_2SH, CH_2OH, NHOH, PO_3H_2, pyrazoles, imidazoles, oxazoles, isoxazoles, thiazoles, isothiazoles, triazoles, oxadiazoles and thiadiazoles.

22. A method as recited in claim 20, wherein B comprises a four or five carbon chain.

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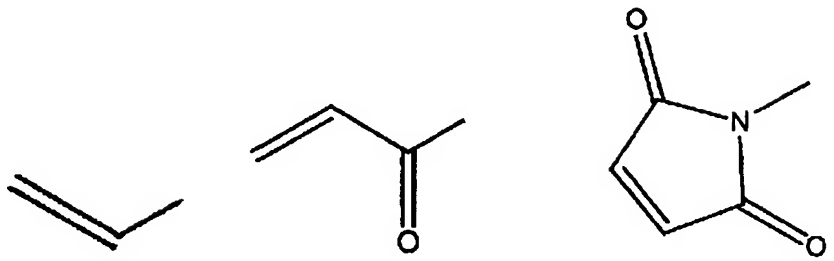
23. A method as recited in claim 20, wherein C is selected from the group consisting of: COCZ, C(EWG)Z, SO_2CZ,



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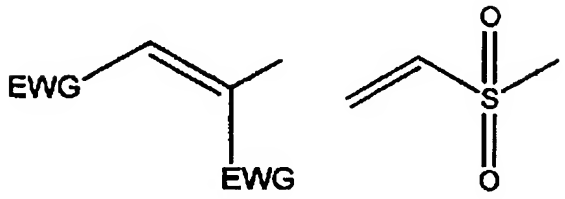

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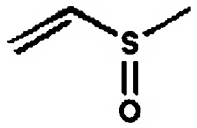

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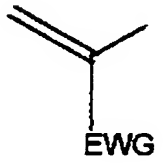

and .

wherein:

EWG is an electron withdrawing group selected from the group consisting of CHO, COR, COOH, COOR, NO_2, CN, SOR, SO_2R, and SO_2OR;

Z is selected from the group consisting of chlorine, bromine, and iodine; and

R is an alkyl or aryl group selected from the group consisting of methyl, ethyl, propyl, i-propyl, butyl, s-butyl, t-butyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl.

24. A method as recited in claim 20, wherein the antibacterial dosage further comprises a pharmaceutically acceptable carrier.

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25. A method as recited in claim 20, wherein the compound does not completely inhibit the activity of Type-II MetAP in the subject but is bactericidal by inhibiting the activity of Type-I MetAP in the subject.

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